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Jenesej River with the view of returning to Europe across Siberia, while the other party returns to Norway by sea in the *Pröven*. The results are exceedingly rich, geographically, geologically, and in a zoological way. The Sea of Kara was found to be completely free of ice, and was thus crossed and dredged for the first time by a scientific expedition. The water at the surface of the Kara was so fresh as to kill the animals brought up from the bottom. The investigations on the ocean currents are of much interest. If, says the account in *Nature*, in the northern part of the Sea of Kara, where the water on the surface is almost completely *free of salt*, and at this time of the year very warm, a flask filled with water from the surface is sunk to a depth of ten fathoms, the water freezes to ice. There are thus no warm ocean currents here at any considerable depth below the surface. On the 8th of August the party landed on the peninsula of Jalmal, which separates the Sea of Kara from the Bay of Obi. Here traces of men, some of whom had gone barefoot, and of Samoyede sledges, were visible on the beach. Close to the shore was found a sacrificial altar, consisting of about fifty skulls of the white bear and walrus, with reindeer bones, etc., laid in a heap. In the middle of the heap of bones there stood, raised up, two idols, roughly hewn from driftwood roots, newly besmeared in the eyes and mouth with blood, also two poles provided with hooks, from which hung bones of the reindeer and bear. Close by was a fire-place and a heap of reindeer bones, the latter clearly a remnant of a sacrificial meal.

ARCTIC STATIONS.—Lieutenant Weyprecht has surprised geographers by his common-sense suggestion that hereafter Arctic explorers should aim to erect stations at different points in the Arctic regions where observers should make simultaneous observations, extending over the period of a whole year, with identical instruments and according to identical rules, giving their first attention to physics, meteorology, biology, and geology, and the second place to geographical discoveries. Accordingly, the German Commission on Arctic Explorations has recommended that a principal station be established on the east coast of Greenland, with secondary stations on Jan Meyer Island and the west coast of Spitzbergen.

### MICROSCOPY.<sup>1</sup>

A DOUBLE STAINING WITH HÆMATOXYLIN AND ANILINE. — When engaged last autumn in the Anatomical Department of the Oxford University Museum in making microscopic preparations of brain, my attention was especially directed to the staining of the sections.

My first attempts were made with hæmatoxylin and carmine. Of these the latter proved useful for detecting nuclei, but, the protoplasm of the cells remaining almost uncolored, it was impossible to distinguish the shape of the different cells, a matter of the greatest importance where, as in the

<sup>1</sup> This department is conducted by DR. R. H. WARD, Troy, N. Y.

brain, cells are met with of such various shapes and sizes. Another great deficiency in the carmine-stained sections was the indistinctness of the fibres. In all cases a long time was required for the carmine to take any effect, sixty to seventy hours being insufficient to stain deeply.

Hæmatoxylin produced much more successful results. In the first place, the fibres were almost always brought out distinctly; and secondly, the cells with their processes were in many cases clearly defined. But still the cortical substance was frequently insufficiently stained, even after twenty-four hours' immersion in the staining fluid, which, owing to the use of alum, is sufficient to render the preparations too brittle to be easily mounted. The special value of hæmatoxylin consists in the clearness with which it brings out the nuclei of the medullary substance, and the fibres and cell-processes of the cortical substance; its fault is a want of depth in the color of the cortical substance.

Having found aniline blue useful for staining some hardened tissues, I was led to try it in this case. The only virtue that it had was that it stained the protoplasm of the medullary cells very darkly, and always attacked them first; that is to say, its strongest point exactly agreed with the weakest point in hæmatoxylin.

This led me to double staining, and the results were fully up to my expectations. The following is the method of staining which I finally adopted. After from twenty to twenty-four hours' immersion in hæmatoxylin I washed the preparation in weak spirit, and then in distilled water till all the spirit was driven out. I then immersed it in aniline for from half to three quarters of a minute, again washed it in spirit, and after the usual treatment mounted it in Dammar.

The preparation of hæmatoxylin used was that recommended by Frey, *i. e.*, a few drops of an alcoholic solution of the pure crystals added to a solution of alum in water. The latter I have used in the proportion of from two to four grains of alum to an ounce of water. The more alum there is in the solution the more rapid is the staining, but there is great danger of making a thin section too brittle by the use of much alum. The aniline I diluted sufficiently to be able to see through it pretty easily.

The results obtained by this method are most satisfactory. The nuclei already stained by the hæmatoxylin are made of a richer color, while the protoplasm surrounding them is much bluer than the nuclei themselves. In the cerebellum the effect is particularly good, the medullary substance being of a rich purple and the cortical substance of a pale blue, but showing the cells with remarkable clearness. — W. H. POOLE, in *Quart. Journ. Mic. Science*.

USE OF CARBOLIC ACID IN MOUNTING. — Mr. T. Barnard, of Kew, Melbourne, communicates to *Science Gossip* a reassertion of the successful use of carbolic acid as a substitute for turpentine in mounting insect dissections. A portion of the insect, fresh, is washed, soaked for a few hours in pure carbolic acid, and then mounted in Canada balsam with

better effect than from turpentine. By the aid of heat the mounting can be accomplished almost immediately. Zoöphytes, after boiling in water to remove the air, can be successfully mounted in the same manner, being transparent and flexible, instead of brittle as by the ordinary turpentine process.

ECCENTRIC PITH OF CLIMBING PLANTS. — Mr. J. B. Hyatt of Morristania, exhibited at a meeting of the Torrey Botanical Club a microscopic specimen consisting of a section of the stem of poison ivy, *Rhus Toxicodendron* L., and having the pith near one side "like a hole bored near the edge of a coin." A similar structure is seen in some other climbing stems, as of *Ampelopsis*, though not in all such; and the editor of the Bulletin suggests, as a mere conjecture, that the extraordinary one-sided thickening may indicate that the plant is nourished by the rootlets imbedded in the bark of the tree.

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### SCIENTIFIC NEWS.

— The Department of the Interior has issued a circular, prepared by Professor Otis T. Mason, designed to direct the attention of the agents of the Indian Bureau and others to the collection of objects and information for the purpose of representing at the Centennial Exposition the history of culture among the aborigines of America, including the tribes now in existence and those which are nearly or quite extinct.

— We regret exceedingly to hear of the untimely death of Dr. Willemöes Sühm, the amiable and accomplished naturalist of the Challenger party. He was a student and assistant of Professor Siebold, of Munich, when invited to accompany Professor Wyville Thompson. American naturalists may remember his cordial and hospitable spirit. He was a special student of the lower worms and the crustacea.

— At the opening meeting of the Royal Geographical Society, November 15th, Sir H. Rawlinson referred with great satisfaction to Stanley's exploration of the Nyanza, and exhibited a complete chart of the lake, drawn by Stanley.

— Dr. Francisco Todaro from his studies on the tunicate, *Salpa*, declares that it has an amnion, and is developed in a true uterus.

— A suggestive article entitled *Consciousness in Evolution*, by Professor Cope, has been reprinted from the *Penn Monthly* for August.

— Science Teaching to Young Children, in *Nature* for November 18th, gives many useful hints on this topic. We doubt, however, whether entomology is rather a "holiday than a school subject," as it seems to us that it can be taught with as much ease and profit as even botany.

— In American Geological Surveys, by Professor Geikie, in *Nature* for November 4th, he speaks in a flattering way of Hayden's U. S. Geological Survey of the Territories.